

Penalized projection estimators of the Aalen multiplicative intensity

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We study the problem of nonparametric, completely data-driven estimation of the intensity of counting processes satisfying the Aalen multiplicative intensity model. To do so, we use model selection techniques and, specifically, penalized projection estimators for a random inner product. For histogram estimators, under some assumptions on the process, we obtain adaptive results for the minimax risk. In general, for more intricate (predictable) models, we only obtain oracle inequalities. The study is complemented by some simulations in the right-censoring model.

Keywords: adaptive estimation; counting processes; model selection; multiplicative intensity model; penalized projection estimators